

# Advancing Health through Food Security

A Multi-Sector Approach to Address the Disease Burden and Costs of U.S. Food Insecurity on our Health System



February 2016

**The Aspen Institute** is an educational and policy studies organization based in Washington, D.C. Its mission is to foster leadership based on enduring values and to provide a nonpartisan venue for dealing with critical issues. The Institute has campuses in Aspen, Colorado, and on the Wye River on Maryland's Eastern Shore. It also maintains offices in New York City and has an international network of partners. [www.aspeninstitute.org](http://www.aspeninstitute.org)

**The Aspen Institute Energy and Environment Program** provides nonpartisan leadership and a neutral forum for improving energy and environmental policymaking through values-based dialogue. With its intentional dialogues, public programs, annual policy forums, and an environmental leadership initiative, the program creates impartial venues for global leaders to engage in informed discussion around energy and environmental challenges and solutions. The Program's core competency is convening professional, high-level, content-driven dialogues in the policy, science, finance, and business arenas. The Program convenes strategic groups of experts from government, business, academia, and nonprofit organizations in dialogue structured and moderated for discussion, exploration, and consensus building.

**The Health, Medicine and Society Program** is a venue for academic, government and industry leaders to explore critical issues in health, healthcare, medicine and health policy and how they may affect individual health and that of families, communities, nations and the world. By convening non-partisan, multi-disciplinary forums, the program facilitates the exchange of knowledge and insights among decision makers and helps to forge networks and other collaborations with the ultimate goal of improving human health.

**The Aspen Institute Dialogue on U.S. Food Insecurity & Healthcare Costs** was a series of meetings and discussions among experts that explored the fiscal and policy relationships, trends and tradeoffs between food insecurity and healthcare costs. This group tested the policy supposition as to whether access to more sustainable and healthful food (i.e., a more food secure nation) could help reduce U.S. healthcare costs, including current spending on programs for treating—rather than preventing—diet-based problems. This dialogue was made possible by generous support from Genentech and The Pocantico Center of the Rockefeller Brothers Fund. As is the case with all materials resulting from meetings held at The Pocantico Center, the views expressed in this report are not necessarily those of the Rockefeller Brothers Fund, its trustees, or its staff.

---

For all inquiries, please contact:

Energy & Environment Program  
The Aspen Institute  
One Dupont Circle, NW | Suite 700  
Washington, DC 20036  
Phone: 202.736.2933  
Fax: 202.467.0790

Copyright © 2016 by The Aspen Institute

The Aspen Institute  
One Dupont Circle, NW | Suite 700  
Washington, DC 20036

Published in the United States of America in 2016 by The Aspen Institute

All rights reserved  
Printed in the United States of America

ADVANCING HEALTH THROUGH FOOD SECURITY: A MULTI-SECTOR APPROACH TO ADDRESS THE DISEASE BURDEN AND COSTS OF U.S. FOOD INSECURITY ON OUR HEALTH SYSTEM. 2016. Nicole Buckley, Assistant Director, Energy & Environment Program, The Aspen Institute.

Cover photos by fatihhoca, Steve Dabenport, and Christopher Futcher.

# TABLE OF CONTENTS

- PREFACE ..... 5
  - Vision for a Food Secure Nation..... 6
  - Aspen Principles for U.S. Food Insecurity & Healthcare Costs..... 7
  
- EXECUTIVE SUMMARY ..... 9
  
- INTRODUCTION ..... 11
  - I. Food Insecurity and Health..... 13
  - II. Understanding the Data: The Relationship between Food Insecurity and Healthcare Costs..... 14
  - III. Policy Approaches to Reducing Food Insecurity ..... 16
  - IV. The Food Industry’s Role ..... 18
  - V. A Unique Opportunity for Healthcare Sector Engagement ..... 21
  - VI. The Need for Ongoing Non-Profit & Philanthropic Leadership ..... 22
  
- DIALOGUE RECOMMENDATIONS ..... 24
  
- CONCLUSION ..... 27
  
- APPENDICES
  - 1. Dialogue Participants ..... 28
  - 2. Resources ..... 30
  - 3. Acronyms..... 33



# PREFACE

Today's rates of food insecurity in the U.S. are understood by experts to be a health crisis, as food insecurity contributes to deterioration of health at all life stages. Recognizing the potential for significant impacts on our country's healthcare system, the Aspen Institute convened the **Dialogue on U.S. Food Insecurity and Healthcare Costs**.

This discussion forum, hosted by the Aspen Institute's Energy & Environment Program and Health, Medicine & Society Program, tested policy and economic assumptions about the relationship between access to nutritious and affordable food and the potential healthcare costs resulting from food insecurity. Participants included representatives from the healthcare industry, food and agribusiness, non-profit leaders and academics focused on food insecurity and health outcomes, policy, and philanthropy.

This document represents the group's findings as developed over the course of three roundtable dialogues convened in 2014-2015, including a set of shared principles established by the group and prioritized recommendations for policymakers and private sector decision makers. The report explores current understandings of the relationship among food insecurity, healthcare costs, poverty, relevant health outcomes (including but extending well beyond obesity), and public and private sector opportunities for addressing food insecurity.

The intended audience for this report is threefold:

- **Policymakers and both experts and non-experts in the private sector**, for whom this document can inform their thinking and strategic approaches;
- **The community of practitioners and academics** focused on food insecurity issues and their implications for healthcare and healthcare costs in the U.S.; and
- **The broader public.**

We are grateful for the generous support from Genentech and The Pocantico Center of the Rockefeller Brothers Fund that made this dialogue series possible, and to our rapporteur Nicole Buckley, who captured the complexity of this conversation throughout the dialogue series.

Not all views expressed here are unanimous; not all comments represent the aim or outcome of the meeting. Participants were not asked to approve the content of this summary and therefore are not responsible for its contents.

The Aspen Institute will continue to support these important discussions regarding the future of public health and the effects of climate change, economic trends, and other long-term factors on our food and health systems. We look forward to hosting future dialogue series on these topics, and hope that this report proves useful to the food security community in better aligning efforts toward the common good.

**David Monsma**  
Executive Director  
Energy & Environment Program  
The Aspen Institute

**Ruth J. Katz**  
Executive Director  
Health, Medicine & Society Program  
The Aspen Institute

## VISION FOR A FOOD SECURE NATION

### *From the Aspen Dialogue on U.S. Food Insecurity & Healthcare Costs*

The members of the Aspen Dialogue on U.S. Food Insecurity & Healthcare Costs offer the following vision for a food secure America, and call for a multi-sectoral, system-wide effort to address the challenge of food insecurity over the coming decade. This vision statement is intended to bring long-neglected recognition to the link between food security and good health and to help chart a pathway forward to address food insecurity on the ground.

*Our vision is that America will be a food secure nation, with all the intersecting systems across sectors—from the food industry to healthcare to policy—working together to create the opportunity for all families to be stronger, healthier and more productive in life. In this system, no individuals or households would be food insecure, with all people having access at all times to enough food for an active, healthy life.*

*Food insecurity in our wealthy country is an unnecessary and costly insult to people's health, dignity, learning, productivity, and family life, and to the nation's prosperity. In the future, food insecurity and hunger should no longer be a driver of poor overall health and health outcomes, nor an economic burden on the nation's economy and on the individual.*

*The causes of food insecurity are both simple and complex, interrelated and universal. They are simple in that they result largely from inadequate jobs, wages or public supports. They are complex in that they are enmeshed with the various strengths and weaknesses of America's job market, healthcare and education systems, food industry, etc. and the ways those forces interact, even for those in our society who are struggling but are not experiencing poverty per se.*

*Our goal here is modest: to pursue a doable set of strategies to quickly and substantially reduce food insecurity, and thereby reduce adverse health consequences and costs.*

## ASPEN PRINCIPLES ON U.S. FOOD INSECURITY & HEALTHCARE COSTS

An Aspen Dialogue is based on sincere interaction among engaged participants with diverse views in a collegial atmosphere that encourages respect for different opinions. In this setting, the Aspen Institute engages dialogue participants in the process of shaping “first principles” necessary to form agreed-upon findings or recommendations, which in this case focus on the link between food insecurity and health outcomes and costs. Over the course of three convenings, the participants in this dialogue series developed the following first principles as the foundation for the recommendations asserted in this report:

### *First Principles for the Aspen Dialogue:*

1. Food insecurity should be recognized as a national health issue. It is a driver of poor health, which in turns drives healthcare costs. Many of these costs could be substantially reduced through access to adequate and appropriate healthy foods.
2. Those who experience food insecurity should not be stigmatized, blamed, or viewed as having a moral failure, as the causes of food insecurity are often due to social and environmental factors beyond the individual’s control.
3. Although experienced disproportionately by those who are low income or impacted by economic shocks, food insecurity is faced by individuals from a diverse set of economic, social, geographic (both urban and rural) and racial and ethnic backgrounds, across the life spectrum.
4. Ensuring food security is a responsibility of government, but must be addressed in conjunction with a multi-sector approach that engages the private sector (including both the food and healthcare industries), non-profits and philanthropy.
5. Addressing the social determinants of health would contribute to alleviating food insecurity, given the various external contexts influencing household and individual food security.
6. Food quality and access are key components of food security and must remain a priority.





# EXECUTIVE SUMMARY

The **Aspen Dialogue on U.S. Food Insecurity and Healthcare Costs** served as a discussion forum for testing economic and policy-related assumptions regarding the short- and long-term impacts of food insecurity on healthcare costs. For the purposes of this report, definitions of the terms “food insecurity” and “food security” used are those established by the United States Department of Agriculture Economic Research Service:

- **Food Insecurity:** A household-level economic and social condition of limited or uncertain access to adequate food.
- **Food Security:** Access by all people at all times to enough food for an active, healthy life.

This report details the dialogue group’s findings regarding the broad healthcare implications of food insecurity, from impeding childhood development to complicating diabetes management and beyond. Food insecurity augments the risk of poor health outcomes in vulnerable populations, and in some cases has been shown to significantly increase healthcare costs. There are concrete steps that can be taken to address this issue in the short-term, through both public and private sector action. In the longer term, further research is needed to build on existing data regarding the direct link between U.S. food insecurity and healthcare costs.

Food insecurity is rooted in parallel social contexts and systems that influence individuals’ ability to access adequate, nutritious food, and both the direct causes of food insecurity and the related socio-economic factors should be addressed. Based on currently available data, the recommendations below are put forward for consideration by public and private decision makers interested in better understanding the impact of food insecurity in the U.S. today. These recommendations outline the short- and long-term opportunities for tackling food insecurity and its implication for overall health, based on the unique roles and skills inherent in each sector.

## *Recommendations in Brief:*

### 1. PUBLIC POLICY APPROACHES

Based on substantial evidence of the adverse impact of food insecurity on health and the emerging data regarding the healthcare costs resulting from food insecurity, policymakers should sustain and strengthen their support for critical food safety net programs that protect food insecure and other vulnerable individuals across the life course.

### 2. FOOD INDUSTRY LEADERSHIP

The food industry—from farmers to food producers to retailers—should more actively engage in innovating around and partnering on food security strategies, and should address food insecurity within its own organizations.

### 3. ENGAGEMENT BY HEALTHCARE ORGANIZATIONS

As food insecurity is increasingly recognized as a health issue and contributor to disease burden, health and health-related organizations should establish protocols to identify and address food security at the clinical level, and in turn help mitigate healthcare costs.

### 4. SUPPORT FROM NON-PROFITS & FOUNDATIONS

Non-profit organizations—including those focused on hunger reduction, early childhood development, education, poverty alleviation, health and other relevant topics—should continue to highlight synergies between food security and health, set priorities for the public and private sectors to address, and support the effective implementation of federal food programs. Philanthropic support for these efforts is critical in the development of resilient and equitable food and healthcare systems.

### 5. FOOD SECURITY RESEARCH

Building on existing data on the relationship among food insecurity, health, and healthcare costs, further investment should be made in food security research designed to evaluate the healthcare costs associated with food insecurity as manifested in short-term illness and long-term vulnerabilities to disease.

# INTRODUCTION

Following the economic downturn of the 2000s, poverty rates in the U.S. have remained high, including in concentrated high-poverty neighborhoods that are continuing to experience poor health outcomes, high crime rates, and low employment opportunities.<sup>1</sup> The number of Americans living in distressed neighborhoods (defined as census tracts with poverty rates of 40% or more) grew by 5 million between 2000 and 2012, with cycles of poverty perpetuated by individuals' own poverty and by the disadvantages of those surrounding them. Just over 46 million Americans were officially in poverty in 2014<sup>2</sup> and the U.S. has a relative poverty rate almost double that of peer nations.<sup>3</sup>

In 2014, more than 48 million Americans lived in households that struggled against hunger (i.e. were “food insecure” according to official data), including 15.3 million children. Food insecurity is experienced not only by those living in poverty and by low-income single-parent families, but also by significant numbers of active duty military and veterans, seniors, people with disabilities, and even fully employed Americans. Some 25% of households supported by the Feeding America network (serving 5.4 million individuals weekly) include active duty military and veterans, with an estimated 620,000 military households relying on food banks. (One study estimates that one in four veterans who served in Iraq and Afghanistan reported food insecurity.) More than half of Feeding America's client households report at least one employed person at some point in the past year. Households experiencing food insecurity generally move in and out of food security, averaging 7 months of food insecurity during the year.

Households experiencing food insecurity frequently report having to choose between food and other basic needs, including utilities, transportation, medical care, housing, and education. Healthcare costs resulting from food insecurity compete with other household expenses, adding to a households' existing economic burdens. In addition to competing with household expenses, food insecurity has broader economic consequences, including bankruptcy—health expenses are the leading reason for personal bankruptcy in the U.S. Two critical points must be recognized: first, that food insecurity is rooted in multiple systems (food, employment, economic, social insurance, health, culture, etc.) which should be addressed in parallel, and second, that food insecurity is not only an issue of “the poor.”

## REAL STORIES OF HUNGER

*Feeding America highlights the real, on-the-ground stories of those in this country experiencing food insecurity. To learn more and watch these stories, visit:*

*[feedingamerica.org/  
hunger-in-america/hunger-stories](http://feedingamerica.org/hunger-in-america/hunger-stories)*

<sup>1</sup> “The Re-Emergence of Concentrated Poverty.” Brookings 2011. Online: [www.brookings.edu/research/papers/2011/11/03-poverty-kneebone-nadeau-berube](http://www.brookings.edu/research/papers/2011/11/03-poverty-kneebone-nadeau-berube).

<sup>2</sup> “2014 Highlights.” U.S. Census Bureau. 2014. Online: [www.census.gov/hhes/www/poverty/about/overview](http://www.census.gov/hhes/www/poverty/about/overview)

<sup>3</sup> “State of Working America.” Economic Policy Institute. Online: [www.stateofworkingamerica.org/fact-sheets/poverty](http://www.stateofworkingamerica.org/fact-sheets/poverty).

Federal food programs are the primary insurer of food security for vulnerable and underserved populations. As wages for the bottom quarter of the population have declined, public enrollment in the federal Supplemental Nutrition Assistance Program (SNAP, commonly referred to as “food stamps”) has increased from 26 million in federal fiscal year 2007 (one in twelve Americans) to nearly 46 million in 2015 (one in seven Americans). To maintain and improve food security, advocates emphasize that it is the responsibility of the federal government to continue to play this core role. Counter-cyclical programs such as SNAP, where participation rapidly increases or decreases as needed, are of paramount importance to national food security.

To discuss various aspects of hunger and malnutrition in the U.S. today, definitions of the terms “food insecurity” and “food security” used are those established by the United States Department of Agriculture Economic Research Service:

- **Food Insecurity:** *A household-level economic and social condition of limited or uncertain access to adequate food.*
- **Food Security:** *Access by all people at all times to enough food for an active, healthy life.*

## FOOD INSECURITY: DEFINING KEY TERMS

**For the purposes of this report, the following definitions are used for various terms relating to food insecurity:**

### ***Food Insecurity***

*A household-level economic and social condition of limited or uncertain access to adequate food.*

*Low Food Security: Generally, people who fall into this category have had to make changes in the quality or the quantity of their food in order to deal with a limited budget.*

*Very Low Food Security: People who fall into this category have struggled with having enough food for the household, including cutting back or skipping meals on a frequent basis.*

### ***Hunger***

*Hunger is an individual-level physical sensation and psychological condition that may result from food insecurity.*

### ***Food Affordability***

*Affordability of food refers to the price of a particular food and the relative price of alternative or substitute foods. Affordability is also impacted by the budget constraints faced by consumers.*

### ***Economic Security***

*The degree to which individuals can meet their basic needs and are protected against hardship-causing economic losses.*

### ***Food Safety***

*Food safety is the science of protecting our food supply from contamination by disease-causing bacteria, viruses, chemicals and other threats to health.*

### ***Healthy Food***

*Meeting the school meal nutrition standards recommended by the Institute of Medicine (IOM) or the USDA’s Dietary Guidelines for Americans.*

*Sources: FRAC.org, USDA Economic Research Service, USDA Center for Nutrition Policy and Promotion, WHO, Economic Security Index, Johns Hopkins Center for a Livable Future.*

Issues of poverty, employment conditions, socio-economic environment, obesity and diet-related disease, and culture are closely related to food insecurity—and, in turn, to negative health outcomes. While non-food related, socio-economic conditions present in food insecure homes (such as unemployment, low wages, maternal depression, substance abuse or incarceration of a parent) can contribute to food insecurity, diet-related disease, and poor health, **this report focuses on hunger as a health issue, including the consequences of food insecurity on healthcare costs in the U.S.** Nonetheless, strategies should be pursued to address various socio-economic challenges in order to improve food security.

Food insecurity in the United States is increasingly being recognized as a risk factor for not only poor nutrition but also many diet-related diseases and poor health. For example, over the last two decades, some 300 studies have found a correlation between access to healthy food, diet, and obesity. Exacerbating the impact of food insecurity, lower income neighborhoods often have fewer grocery stores, higher prices for healthy food, poorer quality fresh produce, and a greater availability of fast food restaurants. These factors, coupled with cycles of food deprivation and overeating, put individuals at a higher risk of poor health.

Policymakers and NGOs are beginning to acknowledge the risk that hunger and related health conditions pose to our health system. However, broad recognition is still lacking around whether programs and policies designed to improve access to healthy food can also serve to reduce U.S. healthcare costs.

Through the **Aspen Dialogue on U.S. Food Insecurity and Healthcare Costs**, the Aspen Institute aimed to test the supposition that access to more sustainable and healthful food (in other words, becoming a more food secure nation) could reduce the costs of treating diseases and conditions associated with poor nutrition and lack of adequate access to healthy food.

Working on a similar timeline to the National Commission on Hunger (established in 2014 and focused on the effective use of existing federal programs and funds to address domestic hunger and food insecurity), the Aspen dialogue group aimed its discussions around developing recommendations for the policy, corporate and NGO communities. This report details the broad healthcare implications of food insecurity as discussed by dialogue participants, from impeding childhood development to complicating diabetes management and beyond, and explores the relevant implications for healthcare spending.

## I. FOOD INSECURITY AND HEALTH

**There are significant data clearly demonstrating that food insecurity is linked to poor nutrition and has substantial negative effects on human health across the life stages.** Food insecurity does not primarily measure the nutritional quality of consumed food, but there is a direct causal relationship between food insecurity and intake of both quality and quantity of key nutrients at the household and individual level. Among seniors, for example, food insecure individuals have predictably low nutrient intakes. Controlling for other risk factors, a food insecure senior has a 53% higher risk of heart attack, 52% higher risk of asthma, 40% higher risk of heart failure, and 60% higher risk of depression compared with food secure seniors.<sup>4</sup>

For children, the impact may be felt early and extend long-term. As one participant noted, “Food insecurity is written on the bodies and minds of children even before they’re born.” **Significant effects of food insecurity include birth de-**

**Food insecurity is written on the bodies and minds of children even before they’re born.**

- Dialogue participant

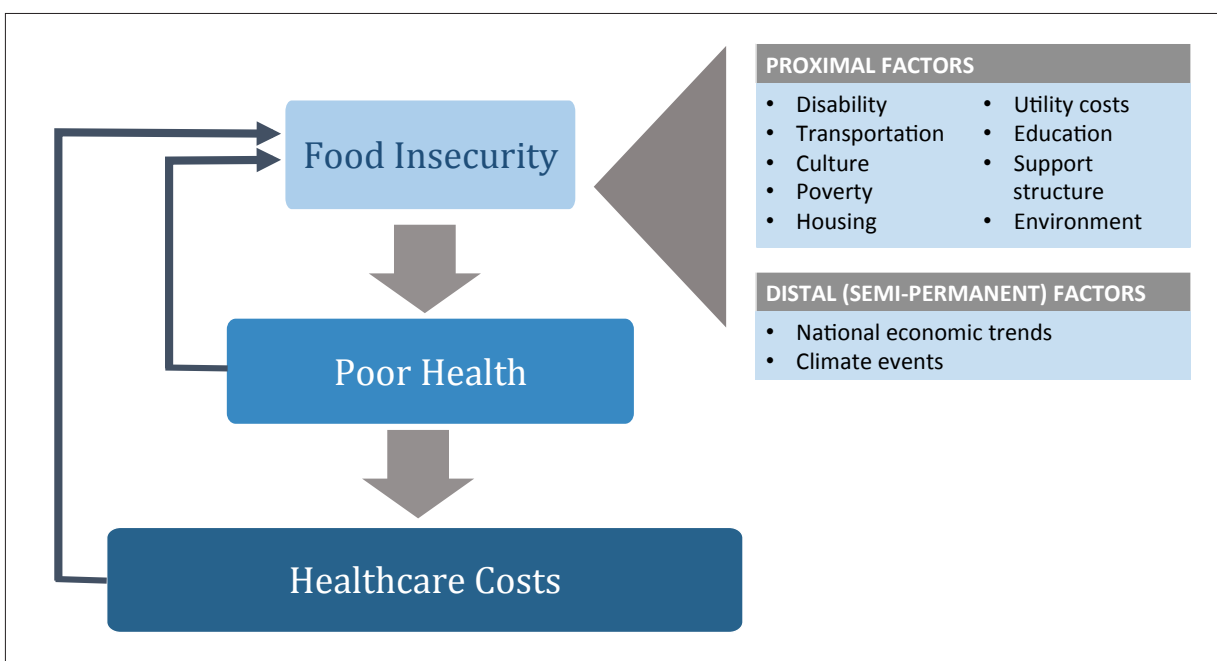
<sup>1</sup> “Spotlight on Senior Health: Adverse Health Outcomes of Food Insecure Older Americans.” Feeding America and National Foundation to End Senior Hunger (NFESH). March 2014.

fects, low birth weight, children’s difficulties with learning and adaptive behavior, anemia, anxiety, poor oral health, and asthma.

Current data show that a significant decrease in food security in the last week of the month (frequently due to SNAP funds running out) can result in diabetes-related complications and also longer-term negative eating behaviors and stress. In California hospitals, a 27% rise in hypoglycemia admissions among low-income patients was observed during the last week of the month, suggesting a relationship between food insecurity and complications of disease management.<sup>5</sup>

Food insecurity and obesity can co-exist in the same person, family, and community. One explanation is that both conditions are independent consequences of low income and the resulting lack of access to enough nutritious food. Many factors come into play here—shortage of resources with which to purchase food, lack of transportation, prevalence of fast food retailers, lower relative prices for processed, energy-rich (and nutrient-poor) foods, and high levels of stress, anxiety and depression in low income families all can contribute to both food security and obesity. As one dialogue participant put it: “We can’t completely disentangle food insecurity from low income and poor health.”

**Figure 2. Following the Impact of U.S. Food Insecurity on Healthcare Costs**



## II. UNDERSTANDING THE DATA: THE RELATIONSHIP BETWEEN FOOD INSECURITY AND HEALTHCARE COSTS

In its November 2015 report, “The Nourishing Effect: Ending Hunger, Improving Health, Reducing Inequality,” the Bread for the World Institute cited the significant costs of food insecurity to society as a whole:

*“Hunger and food insecurity cost the United States as a nation much more than we may realize. In 2014, the most recent year for which we have data, the estimated health-related costs of hunger and food insecurity in the United States were a staggering \$160.07 billion.”*

<sup>5</sup> Seligman et al. “Exhaustion of Food Budgets at Month’s End and Hospital Admissions for Hypoglycemia.” *Health Affairs* 33(2014): 116–123

While the costs of obesity and other diet-related diseases have been well documented, including low birth weight (particularly in low-income neighborhoods with low food security), direct causation between food insecurity and healthcare costs is only beginning to be established. A recent study published in the *Canadian Medical Association Journal* showed that household food insecurity is tightly linked to higher healthcare costs, based on data collected from almost 70,000 Canadians in the province of Ontario. This study demonstrated that healthcare costs of households with low or very low food security can be 49-121% higher than food secure households, and concluded that household food insecurity was a robust predictor of healthcare utilization and costs, regardless of other social determinants of health.<sup>6</sup>

While the Canadian and U.S. healthcare and food systems differ, the results of this study are enlightening for two reasons. First, the measure of food insecurity used in Canada is virtually the same as that employed in the U.S. Second, across most economic indicators, Canada is quite similar to the U.S. Some experts make the argument that the healthcare costs resulting from food insecurity may be even higher in the U.S. because of the higher rates of food insecurity and the generally less comprehensive healthcare coverage in the U.S. (compared to the Canadian system of universal coverage). Nonetheless, to date, no comprehensive analysis of the impacts of food insecurity on healthcare costs in the U.S is available.

To address this deficit, food security experts are calling for the collection and analysis of longitudinal data on U.S. food insecurity and its long-term healthcare consequences. In addition, further research pertaining to nutrient adequacy as a mechanism for reducing poor health across the life span, from pregnancy to old age is necessary, along with any resulting healthcare savings. As one dialogue participant pointed out, “Right now, food insecurity is being treated as a social welfare problem. But it’s really a public health problem.” Moreover, long-term measurements of impact need to be factored better in fiscal policy. **Although Congressional Budget Office (CBO) scoring is limited to ten years, the more long-term benefit to children and young adults of improving food insecurity could have a dramatic downstream effect.**

## WHAT YOU MIGHT NOT KNOW...

**FACT:** More than 48 million Americans, including more than 15 million (one in five) children, lived in households that struggled against hunger in 2014. Food insecurity can be an invisible condition, and we interact with food insecure people every day across various segments of society—at the grocery store, at childcare centers, in restaurants, and in our neighborhoods.

**FACT:** Over 60% of SNAP participants were children, elderly, or had disabilities in 2013. 44% of all SNAP participants were children under age 18.

**FACT:** SNAP is an effective program reducing food insecurity today. Participation in SNAP for 6 months is associated with a decrease of food insecurity by 5-10 percentage points.

**FACT:** The majority of SNAP households do not receive cash welfare benefits. 52% of SNAP households with children in 2013 worked and had earnings.

**FACT:** Food insecurity is prevalent across the food industry. Some of the highest rates of food insecurity in this country are found in high agriculture producing regions (food insecurity among migrant and seasonal farmworkers has been documented to range from 50 to 65%), and about a third of restaurant workers suffer from food insecurity.

<sup>6</sup> Tarasuk et al. “Association between Household Food Insecurity and Annual Health Care Costs.” *Canadian Medical Association Journal* (2015).

Another area highlighted by dialogue participants for further research is the cost drivers for payers and patients for services and prescription drugs related to obesity or nutrition-influenced conditions or illnesses. For example, bolstering food security might contribute to preventing the transition from pre-diabetes to diabetes, with a potentially significant effect on service utilization and costs, given that the presence of diabetes can double other healthcare costs.

With further data and studies of both macro and micro nutrient adequacy as a mechanism for reducing healthcare costs, there may be potential for improving the ability of federally subsidized food programs to promote both nutrition and positive overall health in food insecure communities.

### III. POLICY APPROACHES TO REDUCING FOOD INSECURITY

In the U.S. in 2016, millions of children and adults have enough to eat on some days but not on others; parents and grandparents skip meals so that the children can eat; families fall behind on rent or heat or medical bills to buy food, or they don't eat enough so they can pay for those other basics; people go from food pantry to food pantry to supplement the inadequate amount of food they can purchase; and children and adults adopt cheaper, less healthy diets that harm their productivity, ability to learn, and health. The damage from this food insecurity is great, and improved public policies are the essential means to addressing this problem.

The drivers of food insecurity are largely beyond the control of most affected individuals and households, and eating less than needed or eating unhealthy, cheap food are coping strategies for food insecure households. Maladaptive behaviors resulting from food insecurity—including poor food choices—are often a rational economic response to an inadequate food budget and an economy and public policies that do not provide adequate access to affordable, healthy foods. (Note that the Surgeon General's Healthy People 2020 goal to increase food security is directly related to economic stability, with targets set to eliminate very low food security and reduce household food insecurity by more than one half.<sup>7</sup>) Food coping strategies also relate to food safety issues, as struggling people eat food acquired through unsafe means, dilute foods (particularly problematic for the elderly, infants and young children), or cut back on portions inconsistent with medical advice or drug regimens.

The nation's federally-funded nutrition programs remain the essential bulwark against food insecurity, as well as a vital support for healthy eating and obesity prevention.

Dialogue experts recommend that policymakers **focus on improvements to the adequacy, operations and accessibility of existing nutrition programs**. Structurally sound and growing in impact, these programs must be strengthened further to reach greater numbers of eligible people, provide sufficient benefits, and help launch the nation on a steady path toward ending hunger and improving diet and health. Food security solutions must also target the relevant populations—whether children, working-aged adults, or seniors—based on the respective, varying health outcomes and time frame of effect. Special attention must be paid to groups disproportionately suffering from food insecurity (including people with disabilities, families with young children, immigrants, struggling veterans, members of racial and ethnic minorities, and rural Americans).

Policy solutions must also recognize the breadth of the population struggling with hunger. Because of the economic squeeze on families in which members work, and the volatility in employment and earnings among workers, large numbers of people have come to rely on nutrition program benefits at some point, often for relatively short periods. Over the 36 months from 2009 to 2011, 31.6% of people in the U.S. experienced at least one spell of poverty lasting two or more months.<sup>8</sup>

<sup>7</sup> "Social Determinants of Health." Healthy People 2020. Online: <http://www.healthypeople.gov/2020/topics-objectives/topic/social-determinants-of-health>

<sup>8</sup> Edwards, Ashley N. "Dynamics of Economic Well-Being: Poverty, 2009-2011." Household Economic Studies. U.S. Census Bureau. Issued January 2014. Online: <https://www.census.gov/prod/2014pubs/p70-137.pdf>

**SNAP is the nation's most substantial direct defense against hunger, and, while fundamentally strong, must be improved.**



Critical federal nutrition programs include the Supplemental Nutrition Assistance Program (or SNAP, renamed in 2008, but still often referred to as “food stamps”); school lunch; school breakfast; the Child and Adult Care Food Program that pays for nutrition in Head Start, child care centers, family child care homes, homeless and domestic violence shelters, and afterschool programs; the summer meals programs; and the Special Supplemental Nutrition Program for Women, Infants and Children (WIC). Most of these focus solely on children (or in the case of WIC, on children and pregnant and postpartum women). SNAP eligibility is broader: despite some categorical exclusions, generally low-income adults and children both are eligible. (Three quarters of SNAP benefits, however, go to families with children.) Other, smaller public programs that primarily serve seniors include the Commodity Supplemental Food Program and the Meals on Wheels program.

Much research demonstrates the efficacy of these programs in improving food security, child development, health and well-being. The federal nutrition programs that are entitlements without participation quotas are well targeted in particular to helping people in need and can expand when need grows. That structure allows states, counties, cities and school districts, service providers, advocacy groups, and other nonprofit entities to develop policies, program strategies, best practices, partnerships and outreach mechanisms that add eligible low-income people to coverage and that assure benefits more fully meet need. The programs can also respond robustly and quickly to local as well as national economic downturns.

**SNAP is the nation’s most substantial direct defense against hunger, and, while fundamentally strong, must be improved.** SNAP can do the most to eliminate hunger by delivering benefits directly to struggling families and letting them use the same commercial food outlets as other Americans. The program requires updated and improved monthly allotments, adequate to stave off hunger throughout the month and to purchase a healthy diet. The current allotment typically carries even the most careful of families only three-quarters or four-fifths of the way through the month. The adverse health consequences are underlined by the fact that a 2013 Institute of Medicine study found that the benefit level is not adequate for most families.

**The child nutrition programs, among our nation’s most important and cost-effective public interventions, must be bolstered.** Participation of low and moderate-income students in free and reduced-price school lunch and breakfast needs to be increased through greater outreach, less red tape, and reduced stigma. Children should be given adequate time to eat their meals, so that they are not rushed by long lines and short lunch periods. New nutrition standards need to be fully implemented, and done so in ways that engage students in healthier nutrition.

Similar strategies need to be applied to the other child nutrition programs, including summer and afterschool food programs (only 16 low-income children receive summer lunch for every 100 low-income children who receive school lunch during the school year); childcare food programs (i.e. federally reimbursed meals in the childcare setting); and WIC (in 2013, the most recent year with USDA-published data, only 50% of eligible children ages 1 to 4 received benefits). In these and other programs, again, eligibility needs to be expanded to fully meet the need, red tape reduced, and the quality, timing and frequency of meals made adequate to bolster health and nutrition.

In all of these instances, the role of all stakeholders is crucial. Federal rules and standards must be strengthened, but states and localities must also build on the programs’ strengths and support improvements in on-the-ground access. There is currently too much variation in program participation and quality of benefits. Schools vary widely in the reach and quality of their meals, and in some states, only half of eligible low-income working families get into SNAP, with varying coverage of the WIC-eligible population (from 45 to 82%). States and localities should reduce stigma and other barriers to participation.

#### IV. THE FOOD INDUSTRY'S ROLE

While federal, state and local governments play a critical role in ensuring food security, there is also significant potential for the private sector to bolster food security and healthy eating in the years to come, including in partnership with government programs. With its world class distribution and communication systems, **the food industry can significantly impact the ability of vulnerable populations to make healthy food choices.**

The food industry has a critical role to play in providing safe, nutritious, and affordable food to millions of Americans. Private sector leaders should increase their engagement in efforts to broaden food security by continuing to improve the quality and nutrition of food in today's supply chain and increase affordability, improving the efficacy of the federal food programs by increasing food affordability, while adequately supporting farmers and other stakeholders in the food supply chain. Because 80% of SNAP purchases are made at large scale supermarkets (rather than small supermarkets or convenience stores), focus should be placed on strategies for decreasing the relative price of healthy food at these locations, increasing physical access, and improving nutritional adequacy.

New strategies are needed to address the placement and amount of shelf space assigned in stores to healthy foods. Unique solutions are also needed for rural areas in which supermarkets are not readily accessible and consumers must depend on gas station mini-marts and other small stores where the quality and freshness of available foods are generally less than optimal. Many players in the food industry are looking to better understand their link as food producers, grocers, retailers, manufacturers, or healthcare providers in the food security chain, as well as their role in helping to transform this country's eating landscape and support both healthy community food systems and local economies.

One participant cited Wendell Berry's remark about the need for greater understanding across the food and health sectors: "People are fed by the food industry, which pays no attention to health, and are healed by the health industry, which pays no attention to food." A multi-sectoral approach to food security is needed that will address infrastructural development, food systems resilience, and food access and affordability through system-wide action. All sectors need to be engaged in defining the issues, developing the solutions, and implementing those solutions effectively.

As part of the effort, the common perception that only fresh foods can contribute to a healthy diet and food security should be challenged. Commercial agriculture, industrial food, and alternatives like frozen, canned, dried, and pre-prepared products can play important roles in household food security. Although infrequently discussed in the media, such alternatives can be more nutritious, affordable and accessible than fresh alternatives which may have been picked further from their times of peak ripeness. The role that these foods can play in making a food system sustainable and a population food secure should be better understood and communicated. Social marketing and innovative business strategies or agriculture techniques are needed to address the class bias in the locavore and organic food movements, which today are generally economically feasible only for the most privileged.

Innovation and entrepreneurship within the food industry have significant potential to fill market gaps in our food systems and gaps in the federal safety net programs. **Special attention should be given by private sector innovators to the most vulnerable populations and those where incremental improvements will have the most improvement on food security and health** – seniors, people with disabilities (and their households), expecting mothers, young adults and families with children, especially young children, and immigrants (documented and non-documented).

People are fed by the food industry, which pays no attention to health, and are healed by the health industry, which pays no attention to food.

- Wendell Berry

## Models for Cross-Sector Partnership on Food Security

Partnerships between corporations and both government and non-profit organizations can help the private sector support food security through market-based mechanisms, such as new advertising approaches, store design, product formulation, system alignment and incentives for supporting infrastructure development. The intersecting points between policymakers and retailers for supporting and improving SNAP should be identified. As one participant explained, “It doesn’t help the private retail sector when people don’t have enough money to eat. When people are taken out of regular economic streams and provided food through food pantries, that shifts them out of spending money at stores,” diminishing the likelihood of the private sector innovating to meet these individuals’ needs.

SNAP and WIC are the quintessential public-private partnerships, as they provide public resources to be spent in private commercial outlets and consumed by clients “at the kitchen table.” The private sector—in cooperation with public programs—can play a role, not just in encouraging participation by, for example, supporting outreach efforts, but also in helping to **decrease the stigma associated with utilizing government food programs**. The importance of dignity at the moment of purchase in the store, and other strategies for incentivizing positive decisions, are critical components of success. As one participant explained, “When we start to look at dignity at the moment of purchase in the store, we need to understand incentivizing positive decisions, in ways that empower and dignify, rather than restricting and causing stigma.” This type of dialogue must be developed between the public and private sector to build effective and sustainable solutions.

Several types of multi-sector partnership models have been developed to address food insecurity in the U.S. The **leverage-based model** is typified by the Summer Food Service Program (SFSP). This model uses federal funding, with local sponsors providing food to clients at a set rate through non-profit organizations, government entities, churches, universities, and camps (and reimbursed by the government). A large number of participants can be reached this way, achieving considerable scale. In 2016, for example, the USDA plans to serve more than 200 million free meals to children 18 years and under at approved SFSP sites. However, disconnects can also arise within these types of systems, when NGOs, federal and state governments, and advocates are not in direct communication, and innovative change can be slower to happen than in other models.

An example of an innovative multi-sector partnership using the leverage-based approach to increase accessibility of fruits and vegetables for SNAP recipients is the **Healthy Incentives Pilot (HIP)** in Massachusetts, implemented by the Massachusetts Department of Transitional Assistance (DTA) in Hampden County. This initiative is supported through the 2008 Farm Bill, which authorized federal funds for demonstration projects to determine whether financial incentives provided to SNAP recipients at the point-of-sale increase consumption of healthful foods. HIP participants earned an incentive of 30 cents for every SNAP dollar spent on targeted fruits and vegetables. DTA offices partnered with local organizations, such as non-profits, health centers, libraries, etc. to disseminate project information, and recruited local retailers, such as large supermarket chains and independent retailers, to participate. HIP participants were found to consume almost a quarter of a cup (26%) more targeted fruits and vegetables per day than did non-participants.

Dialogue participants suggested that project results might have been even stronger if food navigators—lay people trained to connect families in need with local and federal assistance—were recruited and compensated. This approach would help to better predict when families become at risk and may need food aid, and could be supported by both federal and philanthropic funds.

A second cross-sector partnership model is the **cross-issue collaboration**, such as the Walmart Foundation’s **Starting Right Initiative** with the Children’s Health Fund. This partnership focuses on individualized approaches to food securi-

**When we start to look at dignity at the moment of purchase in the store, we need to understand incentivizing positive decisions, in ways that empower and dignify, rather than restricting and causing stigma.**

- Dialogue participant

ty, including providing food security screenings at the clinic level, working with health centers and schools to develop pediatric obesity screening and diagnostic tools, training providers to identify and address weight and nutrition challenges, and developing provider messaging for primary care practitioners and other experts. The challenges with this model are achieving scale and securing alignment of varying operational models and incentives across organizations.

Another example of the cross-issue collaboration model is the [Convergence Partnership](#), an initiative supported by foundations and healthcare institutions to address the challenges of healthy food and lifestyles by sharing innovations in the field and creating policy influence at the local, state and regional levels. Eight organizations make up the Partnership, including Ascension Health, the California Endowment, Kaiser Permanente, the Kresge Foundation, the MacArthur Foundation, Nemours, the Robert Wood Johnson Foundation, and the W.K. Kellogg Foundation. The Centers for Disease Control and Prevention serves as the Partnership's technical advisor, while PolicyLink directs the program and the Prevention Institute serves as a strategic advisor.

This partnership produced the [Healthy Food Financing Initiative \(HFFI\)](#), which was announced by President Obama in 2010 and now brings healthy foods into underserved areas by providing financial incentives to full service grocery stores to open locations in new areas. This initiative has expanded to a number of states with the support of both philanthropic and public funding. The Convergence Partnership also supports the Food and Agriculture Collaborative, a cross-sector partnership of the Fair Food Network, Food Research and Action Center, National Sustainable Agriculture Coalition, and PolicyLink, to promote healthy food and healthy economies through improving SNAP, increasing consumer access to healthy food, and supporting local farmers and food systems.

The Convergence Partnership has also spun off another organization, the [Partnership for a Healthier America \(PHA\)](#), which engages with the private sector to make commitments around ending childhood obesity.

Finally, a **collective-action model** has been developed that is often place-based, such as ConAgra's partnerships in Omaha that bring together various partners to develop holistic approaches to child hunger. This model engages many relevant stakeholders with diverse opinions, often focuses on the individual (whole-person centered), and augments shared understanding across sectors. The challenge in this model is that it can be expensive to develop and difficult to scale. It is also highly dependent on energy at the start of a project and may be driven by one or a few leading individuals.

A second example of this collective-action model is [Local Food, Local Places](#), a program supported by several federal agencies—including the EPA, USDA, CDC, and others—to help communities to “create walkable, healthy, economically vibrant neighborhoods through the development of local food systems.” Operated in partnership with the Appalachian Regional Commission, Delta Regional Authority, and the White House Rural Council, the initiative engages business leaders and small towns to boost economic opportunities and use holistic approaches to community health. This includes creating year-round downtown food markets, planning cooperative grocery stores, establishing centrally-located community kitchens or food hubs and business incubators, and supporting gardening in the local communities.

Moving forward, the food security community will need to continue to tackle several questions regarding various partnership approaches: How can collaboration be incentivized to promote innovation, without diluting the talents of each contributor? How can the goals and execution of partnership initiatives be better aligned in the future? Participants from each sector should be mindful of the need for ongoing improvement and learning from each partnership experience, and embrace the opportunity for maximizing impact and efficacy as best practices are established.

## **New Approaches and Innovations around Food Security**

**Beyond singular public-private partnerships, the food security community has identified an even greater need for infrastructure development that will provide permanent, ongoing support to target populations.** The food system requires a multi-sector effort to address the nation's ongoing state of food insecurity, bringing in private resources and corporations where possible. As with our disaster relief infrastructure, training systems must be established that

involve all levels of leadership across sectors, so that the unique roles of corporations, policymakers, religious organizations, and other stakeholders are made clear. Dialogue participants emphasized that this is not a matter of creating entirely new support systems, but rather one of better integration and coordination of existing and developing approaches from across sectors to better align to meet the current gaps.

Innovations in this space might include social impact bonds that target access to both food and capital through rural development initiatives. Other private innovations on food insecurity include efforts to minimize food waste (some 40% of food in the U.S. is wasted annually). One example is [Daily Table](#), a new non-profit retail market opened by Doug Rauch, former President of Trader Joe's, in Dorchester Massachusetts, to prepare and repackage edible produce past its sell-date at discounted rates. Similarly, the Canadian grocery chain Loblaws has begun selling less attractively shaped fruits and vegetables that might otherwise be thrown away at as much as a 30% discount.

## SPOTLIGHT ON INNOVATIVE PRIVATE SECTOR APPROACHES

### ***Revolution Foods***

*Oakland, California-based Revolution Foods is addressing the need for healthy, low-cost school lunches by serving vegetable and fruit-focused meals in some 25 metro markets across the country (including now the San Francisco Unified School District for over 20,000 meals daily). The company is working closely with school districts to produce healthy meals that are compliant with the National School Lunch Program.*

*In the summers of 2013 and 2014, Revolution Foods partnered with the Stanford School of Medicine, the East Palo Alto school district, and the local YMCA to establish a program to serve needy families. Using both federal funds and private donations, the program provided breakfast and lunch to children, lunch to adults in the community, and take-home meals for families, all distributed through a local elementary school used for various summer school programs. The program served more than 33,000 meals to over 1,200 children and adults. Researchers surveying participants at the beginning and end of the five-week program found that food insecurity among surveyed families fell from 36% food insecure to 22% at the end of the program.*

### ***Menus of Change***

*The Business of Healthy, Sustainable, Delicious Food Choices initiative developed by The Culinary Institute of America (CIA) in collaboration with Harvard's T.H. Chan School of Public Health is focused on creating a long-term, practical vision for the integration of optimal nutrition and public health, environmental stewardship and restoration, and social responsibility concerns within the foodservice sector and beyond. Its "Menus of Change" program provides chefs and foodservice leaders with menu and recipe guidance related to health and sustainability, along with business strategies that integrate both environmental and nutrition science imperatives.*

## V. A UNIQUE OPPORTUNITY FOR HEALTHCARE SECTOR ENGAGEMENT

The healthcare industry also has a critical role to play in addressing food insecurity on the ground. Food security experts have noted the lack of engagement in food security discussions throughout the healthcare system, despite recent recognition of the role of hunger in increasing disease burden. Food insecurity is increasingly understood by experts as a factor inhibiting healthcare providers' ability to effectively take care of patients, making this a systemic health issue. As one participant noted, "If you knew a patient was food insecure, you would practice differently." Food insecurity and hunger must be understood as a health issue.

At the same time, food insecurity solutions cannot be limited to the physician-patient encounter, given the short time allocated to these encounters and competing health priorities. Systemic solutions must be identified that the health-care industry can advocate for and operationalize where needed. One dialogue participant compared the current need for support from healthcare providers to their historical role in recognizing and addressing domestic violence as a health issue, helping to elevate the problem nationally.

A leading private-sector innovator in this space is ProMedica, a non-profit healthcare system in Ohio and Michigan. Since 2015, ProMedica has been screening patients for food insecurity and hunger as part of the admission process. When discharged, patients requiring assistance are given a one day food supply and information about community resources that can help to meet their food needs. To enhance this effect, beginning in 2016, ProMedica will also open prescription food pharmacies.

ProMedica also partnered with the AARP Foundation in 2015 to establish [The Root Cause Coalition](#), a non-profit organization to engage health professionals, public health organizations, government officials, and the nutrition and food industry to promote education, advocacy and community-based programming around food insecurity and health

outcomes. The group advocates for all patients being screened for food insecurity by 2025 and other best practices for healthcare providers, in addition to partnering with health insurers to address the social determinants of health, among other approaches.

**Kaiser Permanente of Colorado**, an integrated delivery system covering over 600,000 members, is also addressing food insecurity through its provider network. Colorado has some of the lowest levels of SNAP participation among eligible residents of any U.S.

state. To address this issue, Kaiser Permanente partnered with [Hunger Free Colorado](#) in 2011 to improve hunger-screening efforts at the clinic level. By using a two-question hunger screen, and then referring food insecure patients to the Hunger Free Colorado Hotline, the program was able to connect clients with education about food assistance

and application information. Referrals to the hotline rose from 60 in 2012, to over 1,500 in 2014, with 78% of clients connected to government nutrition assistance programs, food pantries, Meals on Wheels and senior food programs.

**Looking ahead, the food security community emphasizes the need for systemic approaches and creative interventions to food insecurity, starting at the clinic level.** These include universal food security screenings in hospitals and at the healthcare provider level (the American Academy of Pediatrics now recommends that pediatricians screen all children for food security), embedding social determinants of health into electronic health records, prescribed treatment following screenings and linking eligible patients to related benefits and healthy food sources, and training for healthcare providers on discussing these issues with patients. Other strategies that should be considered include coding food security to cover the cost of food as medicine, and facilitating access to nutrition programs through various healthcare settings.

## VI. THE NEED FOR ONGOING NON-PROFIT & PHILANTHROPIC LEADERSHIP

The non-profit and philanthropic sectors continue to play an important role in bolstering national food security efforts and in highlighting the connections between food security and health. Through partnerships with corporations and with federal food programs, non-profits support the delivery of food safety net programs to individuals and schools, support new research and education, and are advocates for important policy programs that support food security. From national organizations to grassroots organizers providing direct service, the non-profit sector is an important stakeholder in the food security community. Community-based organizations partner with food banks and healthcare organizations to increase access to affordable, healthy foods and enhance long-term health.

**If you knew a patient was food insecure, you would practice differently.**

- Dialogue participant

**Meals on Wheels America** is an important example of cross-sector approaches to delivering food aid to eligible individuals with the support of the non-profit community. Funded by a group of foundations and corporations (including the AARP Foundation and Kellogg's), Meals on Wheels America supports over 5,000 community-based senior nutrition programs reaching nearly 2.5 million seniors. With the help of two million volunteers, the organization delivers meals to seniors and directly addresses the challenges of senior isolation and hunger.

Another example of an effective partnership in this space is Feeding America's diabetes work, funded by the Bristol-Myers Squibb Foundation. Through pilots at three member food banks—Redwood Empire Food Bank, Food Bank of Corpus Christi, and Mid-Ohio Foodbank—the partnership offered participants diabetes-appropriate food, education, blood sugar monitoring and healthcare referrals. This resulted in improvements in participants' blood sugar and diabetes-related distress. Based on this pilot (conducted in 2011-2014), Feeding America is designing a randomized control trial to evaluate the effectiveness of food banks' in identifying food insecure clients with uncontrolled diabetes and providing targeted care. The final results are expected at the end of 2017.

Non-profits and funders are also playing a central role in supporting the development of strong national food security policies. These include Bread for the World, a leading organizer among Christian communities advocating for solutions to ending hunger both domestically and globally. The **Bread for the World Institute** (the research arm of Bread for the World) develops hunger-related policy analysis that informs policymakers and other opinion leaders.

The **Food Research and Action Center (FRAC)** focuses on improving public policies and cross-sector partnerships around hunger and undernutrition in the U.S. by conducting research on the presence of hunger on the ground, informing the general public of developing trends and priority solutions, and providing technical assistance and strategic support to anti-hunger advocacy groups and providers around the country. These types of research and education organizations are essential for building decision makers' understanding of U.S. food security and its impact on health.

Finally, the **Center on Budget and Policy Priorities** is a non-partisan research and policy institute focused on federal and state policies for reducing poverty and inequality and restoring fiscal responsibility in equitable and effective ways. The Center's work includes research into federal and state Temporary Assistance for Needy Families (TANF), assisting outreach to eligible families and supporting family-specific needs.

# DIALOGUE RECOMMENDATIONS

The following recommendations capture the discussions and findings of the Aspen Dialogue on U.S. Food Security and Healthcare Costs. They are targeted for consideration by public and private decision makers interested in the impact of food insecurity in the U.S. today. The recommendations include both short and long-term opportunities for tackling food security and its implications for health, and are based on the unique roles and skills inherent in the public, private and philanthropic sectors.

- 1. Based on substantial evidence of the adverse impact of food insecurity on health and the emerging data regarding the healthcare costs resulting from food insecurity, policymakers should sustain and strengthen their support for critical food safety net programs that protect food insecure and other vulnerable individuals across the life course.**

The current U.S. food safety net provides the inputs (i.e. food) critical for individuals in need to be productive members of society. Policymakers should focus on improving existing programs that provide essential support to food insecure and other vulnerable communities, including SNAP, WIC, the National School Lunch Program, the School Breakfast Program, Summer Food Program, Child and Adult Care Food Program (CACFP), Food Distribution Program on Indian Reservations (FDPIR), and adult feeding programs. Improvements to the operations and accessibility of these programs is feasible and urgent in the short-term. Improving the adequacy and quality (e.g. nutritional value) of foods provided through the food safety net should be a priority in program development and implementation.

Maladaptive behaviors resulting from food insecurity—including poor food choices—are a rational economic response to an inadequate food budget and a food system that does not provide adequate access to cheap, healthy foods. Policies should be put into place that make food budgets more adequate and can steer underserved populations toward healthier choices and address food safety issues. Policymakers should also pursue strategies to address related socio-economic challenges in order to improve food security, and, in turn, health outcomes.

- 2. The food industry—from farmers to food producers to retailers—should more actively engage in innovating around and partnering on food security strategies, and should address food insecurity within its own organizations.**

The private sector cannot replace public resources for food security, but there is significant opportunity and need for innovation within the private sector to identify intersections, leverage scale, and address gaps in the system to increase food security and food safety. American agribusinesses can have significant impact on the ability of vulnerable populations to make healthy food choices, and should leverage their aptitude for innovation to increase the availability and affordability of healthy foods.

A multi-sectoral approach to food security is needed to address infrastructure development, food systems resilience, and food access through system-wide action. Partnerships between corporations and both government and



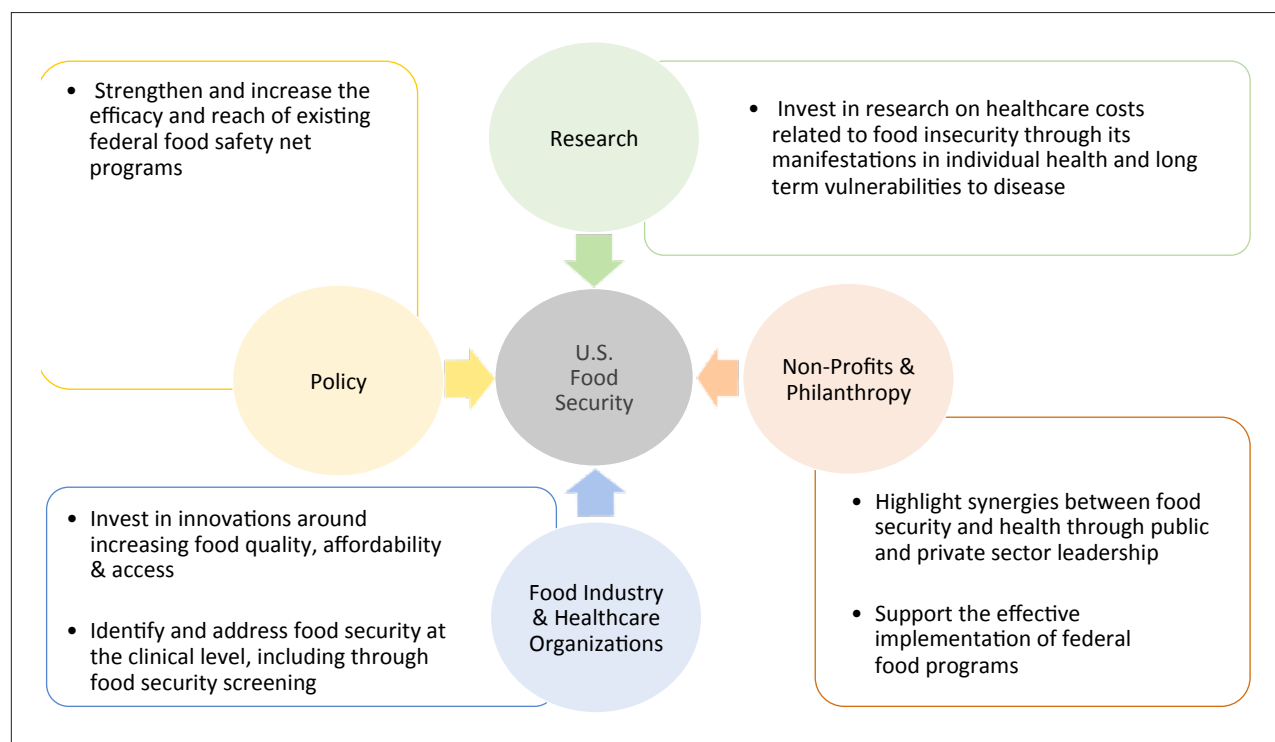
non-profit organizations can help the private sector to support food security through market mechanisms and develop permanent infrastructure that supports food security. Innovation and entrepreneurship in the private sector have significant potential to fill market gaps in our food systems and gaps in the federal safety net programs. Various models for public-private partnerships should be considered, as they provide an opportunity for the private sector to participate in federal feeding programs and increase their efficiency and reach.

3. **As food insecurity is increasingly recognized as a health issue and contributor to disease burden, health and health-related organizations should establish protocols to identify and address food security at the clinical level, and in turn help mitigate healthcare costs.**

Healthcare providers in particular have a central role to play in addressing food insecurity on the ground. Systemic approaches are needed going forward, such as universal food security screenings by health professionals and in healthcare settings. Other strategies include embedding social determinants of health into electronic health records, prescribed treatment following screenings and linking eligible patients to related benefits and healthy food sources, and training for healthcare providers on discussing these issues with patients.

Healthcare groups should continue to broaden their communications and partnerships with other sectors to address food security, building on those partnerships and coalitions already in place. The Root Cause Coalition, Convergence Partnership, and Partnership for a Healthy America offer opportunities for education and action, and healthcare leaders should look to the resources in their own organizations to develop innovative approaches and solutions.

**The chart below highlights the critical role that each sector can play in addressing food insecurity challenges, to uniquely address the health, food, and economic needs of vulnerable populations.**



4. **Non-profit organizations—including those focused on hunger reduction, early childhood development, education, poverty alleviation, health, and other relevant topics—should continue to highlight synergies between food security and health, set priorities for the public and private sectors to address, and support the effective implementation of federal food programs. Philanthropic support for these efforts is critical in the development of resilient and equitable food and healthcare systems.**

Non-profits are essential for the delivery of federal food safety net programs to individuals and communities. From national organizations to grassroots organizers providing direct service, the non-profit sector is an important stakeholder in the food security community.

Non-profits and philanthropy also play a central role in supporting the development of strong national food security policies, supporting new research and communicating findings to decision makers and the broader public. Research, advocacy and education organizations focused on hunger, food insecurity and health are essential for developing public and private sector leaders' understanding of U.S. food security today.

5. **Building on existing data on the relationship among food insecurity, health, and healthcare costs, further investment should be made in food security research designed to evaluate the healthcare costs associated with food insecurity as manifested in short-term illness and long-term vulnerabilities to disease.**

A substantial literature has been developed on the impacts of food insecurity on healthcare *outcomes* in the U.S.; what is lacking are data and analysis regarding the impacts of food insecurity on healthcare costs. Areas for further research highlighted by food security experts include the cost drivers for payers and patients for services and prescription drugs related to nutrition-influenced conditions or illnesses, and nutrient adequacy as a mechanism for reduction in healthcare costs.

# CONCLUSION

Food insecurity is one of the most pressing—but most remediable—challenges faced by the nation’s vulnerable and low-income populations today. Food insecurity—already common before the recession—increased significantly following the 2008 financial collapse, and has not receded back to previous levels. Given this ongoing crisis, as well as the lack of broad acknowledgement of the relationship between food insecurity and health, the food security community has developed a new vision for a better coordinated, multi-sector approach to tackling this issue.

The private sector can provide important value by developing strategies and supporting projects that improve food security and health in innovative ways and by improving the use and efficacy of federal programs. However, government has the primary role in filling economic gaps and addressing food access, and it must maintain that role. Federal food security programs can not only improve health, but they can also prevent wasteful expenditures on preventable diet-related conditions.

Beyond the socio-economic factors influencing food security, climate change is also likely to act as a threat multiplier in the coming years, increasing food security risks. Extreme climate events, such as flooding and drought, can significantly impact whether sufficient and affordable food is available in a region. Growing climate-related risks also include the role of increased temperatures in propagating food pathogens, with consequences for food safety, and the impact of rising carbon dioxide levels on human nutrition. Given the developing risks that changing climate patterns pose to our food system, opportunities to alleviate food insecurity must be utilized to protect the parts of our population most vulnerable to food insecurity.

To build on the expert community’s current understanding of the impacts of food insecurity on health, further research is needed including studies using longitudinal data on U.S. food insecurity and its long-term healthcare consequences, as well as research on nutrient adequacy as a mechanism for reducing healthcare costs. Such research would make an important contribution to the ongoing debate about the value of federal food programs.

An information clearinghouse may be needed to curate and disseminate new data and other findings around the intersection of health and food insecurity to all relevant stakeholders. Food security experts also call for more dialogues, like the Aspen Dialogue on U.S. Food Insecurity and Healthcare Costs, focused on various aspects of food insecurity such as education, agribusiness, and other factors not covered in detail in this report.

By focusing on the recommendations put forward by the Aspen Dialogue participants, and adopting a shared model for the nation’s food and health systems, the food security community—from policymakers and business executives to NGOs and researchers—can work together to ensure a more cohesive and effective strategy for supporting long-term food security in the U.S., supported by the strengths and skills present across sectors.

# APPENDIX I: DIALOGUE PARTICIPANTS

**Raymond Baxter**, Senior Vice President, Community Benefit, Research and Health Policy, Kaiser Permanente  
**Heidi Blanck**, Chief, Obesity Prevention and Control Branch, Division of Nutrition, Physical Activity, and Obesity, National Center for Chronic Disease Prevention, Centers for Disease Control and Prevention  
**Lisa Boyd**, Senior Group Manager, Food Social Responsibility, Target  
**Karrie Denniston**, Director, Strategic Initiatives, Walmart Foundation  
**DeShele Dorsey-Taylor**, National Program Director, Hunger Volunteer Connection, ConAgra Foods  
**Ginny Ehrlich**, Director, Childhood Obesity Initiatives, Robert Wood Johnson Foundation  
**Jeremy Everett**, Director, The Texas Hunger Initiative  
**Deborah Frank**, Director, Grow Clinic for Children Boston Medical Center; Founder and Principal Investigator, Children's HealthWatch, Professor, Child Health and Well-Being, Boston University School of Medicine  
**Craig Gundersen**, Soybean Industry Endowed Professor of Agricultural Strategy, University of Illinois at Champaign-Urbana  
**Benjamin Harris**, Policy Director, The Hamilton Project; Deputy Director, Retirement Security Project; Fellow, Brookings Institution  
**Corby Kummer**, Senior Editor, *The Atlantic*  
**Robert Lawrence**, Professor, Environmental Health Sciences, Center for a Livable Future, Johns Hopkins Bloomberg School of Public Health  
**Lisel Loy**, Director, Nutrition and Physical Activity Initiative, Bipartisan Policy Center  
**Jeanne Mayland**, Manager, Corporate Social Responsibility, Target Corporation  
**Jewel Mullen**, Commissioner of Public Health, State of Connecticut; President-Elect, Association of State and Territorial Health Officials  
**Randy Oostra**, President and Chief Executive Officer, ProMedica Health System  
**Ann Rindone**, Director, Cause and Foundation, ConAgra Foods  
**Kirsten Saenz Tobey**, Co-Founder and Chief Impact Officer, Revolution Foods  
**Sandra Schubert**, Former Undersecretary, California Department of Food and Agriculture  
**Marlene Schwartz**, Director, Rudd Center for Food Policy & Obesity, University of Connecticut  
**Hilary Seligman**, Associate Professor, School of Medicine, University of California, San Francisco; Senior Medical Advisor and Lead Scientist, Feeding America  
**Kenneth D. Smith**, Director, Center to Eliminate Health Disparities, University of Texas Medical Branch  
**Mary Sophos**, Executive Vice President, Policy and Strategic Planning, Grocery Manufacturers Association  
**Eugene Takle**, Director, Climate Science Program, Professor of Atmospheric Science, Iowa State University

**William Tatum**, Director, Health and Nutrition Policy, Federal Affairs, Grocery Manufacturers Association  
**Janey Thornton**, Deputy Under Secretary, Food, Nutrition, and Consumer Services, U.S. Department of Agriculture  
**Elaine Waxman**, Senior Fellow, Urban Institute  
**Amy Yaroch**, Executive Director, Gretchen Swanson Center for Nutrition  
**James Weill**, President, FoodResearch & Action Center  
**James Ziliak**, Founding Director of the Center for Poverty Research and Gatton Endowed Chair in Microeconomics, Department of Economics, University of Kentucky  
**Lewis Ziska**, Research Plant Physiologist, Office of National Programs, Acting National Program Leader, NP 214, NP 216, Natural Resources and Sustainable Agricultural Systems

#### DIALOGUE MODERATORS

**Ruth Katz**, Executive Director, Health, Medicine & Society Program, The Aspen Institute  
**David Monsma**, Executive Director, Energy and Environment Program

#### RAPPORTEUR

**Nicole Buckley**, Assistant Director for Environment & Development, Energy & Environment Program, The Aspen Institute

## APPENDIX II: RESOURCES

“2016 Hunger Report: The Nourishing Effect: Ending Hunger, Improving Health, Reducing Inequality.” Bread for the World Institute, November 2015. Available at: <http://hungerreport.org/2016/wp-content/uploads/2015/11/HR2016-Full-Report-Web.pdf>

Acevedo-Garcia et al. “The Child Opportunity Index: Improving Collaboration between Community Development and Public Health.” *Health Affairs*, 33, no. 11 (2014): 1948 – 1957.

Almond, D., H. Hoynes, and D. Schanzenbach. “Inside the War on Poverty: The Impact of Food Stamps on Birth Outcomes.” *The Review of Economics and Statistics* 93(2011): 387–403.

Andersen, S.A. (Ed.) Life Sciences Research Office. “Core Indicators of Nutritional State for Difficult to Sample Populations,” *The Journal of Nutrition* 120 (1990): 1557S-1600S.

Balistreri, K. “Family Structure, Work Patterns, and Time Allocations: Potential Mechanisms of Food Insecurity among Children.” University of Kentucky Center for Poverty Research Discussion Paper Series, October, 2012. Available at [ukcpr.org/Publications/DP2012-07.pdf](http://ukcpr.org/Publications/DP2012-07.pdf).

Basu, S., H. K. Seligman, C. Gardner, and J. Bhattacharya. “Ending SNAP Subsidies for Sugar-Sweetened Beverages Could Reduce Obesity and Type 2 Diabetes.” *Health Affairs* 33(2014): 1032–1039.

Berry, Wendell. “Sex, Economy, Freedom & Community: Eight Essays.” New York: Pantheon Books, 1994.

Bolen, E., D. Rosenbaum, and S. Dean. “Summary of the 2014 Farm Bill Nutrition Title.” Last modified February 3, 2014. Center on Budget and Policy Priorities. Available at [cbpp.org/research/summary-of-the-2014-farm-bill-nutrition-title-includes-bipartisan-improvements-to-snap](http://cbpp.org/research/summary-of-the-2014-farm-bill-nutrition-title-includes-bipartisan-improvements-to-snap).

“The Budget and Economic Outlook: 2014 to 2024.” Congressional Budget Office. Last modified February, 2014. Available at [cbo.gov/publication/45010](http://cbo.gov/publication/45010).

“Capturing Social and Behavioral Domains in Electronic Health Records: Phase I.” Washington, DC: The National Academies Press (2014). Available at: [iom.nationalacademies.org/Reports/2014/Capturing-Social-and-Behavioral-Domains-in-Electronic-Health-Records-Phase-1.aspx](http://iom.nationalacademies.org/Reports/2014/Capturing-Social-and-Behavioral-Domains-in-Electronic-Health-Records-Phase-1.aspx)

Coleman-Jensen, A., C. Gregory, and A. Singh. “Household Food Security in the United States in 2013.” *ERS Research Report* 173 (2014). Available at [ers.usda.gov/media/1565415/err173.pdf](http://ers.usda.gov/media/1565415/err173.pdf).

“Evaluation of the Healthy Incentives Pilot (HIP) Final Report.” USDA Food and Nutrition Service, September 2014. Available at: [fns.usda.gov/sites/default/files/HIP-Final-Summary.pdf](http://fns.usda.gov/sites/default/files/HIP-Final-Summary.pdf)

“Food Insecurity of Restaurant Workers.” Food Chain Workers Alliance, Restaurant Opportunities Center of NY and the Bay, Food First / Institute for Food Development Policy, July 2014. Available at: [foodfirst.org/wp-content/uploads/2014/07/2014-07-Food-Insecurity-of-Restaurant-Workers-report-1.pdf](http://foodfirst.org/wp-content/uploads/2014/07/2014-07-Food-Insecurity-of-Restaurant-Workers-report-1.pdf)

“Food Security in the U.S.” USDA Economic Research Service. Available at: [ers.usda.gov/topics/food-nutrition-assistance/food-security-in-the-us/frequency-of-food-insecurity.aspx](http://ers.usda.gov/topics/food-nutrition-assistance/food-security-in-the-us/frequency-of-food-insecurity.aspx)

Fraker, T., and R. Moffitt. 1988. “The Effect of Food Stamps on Labor Supply. A Bivariate Selection Model.” *Journal of Public Economics* 35(1): 25–56.

“Freedom from Hunger: An Achievable Goal for the United States of America.” Recommendations of the National Hunger Commission to Congress and the Secretary of the Department of Agriculture (2015). Available at: [mcgovern.house.gov/sites/mcgovern.house.gov/files/Hunger\\_Commission\\_2016\\_Report.pdf](http://mcgovern.house.gov/sites/mcgovern.house.gov/files/Hunger_Commission_2016_Report.pdf)

Gunders, Dana. “Wasted: How America is Losing up to 40 Percent of Its Food from Farm to Fork to Landfill.” *NRDC Issue Paper* (August 2012). Available at: <https://www.nrdc.org/food/files/wasted-food-ip.pdf>

Gundersen, Craig and James P. Ziliak. “Childhood Food Insecurity in the U.S.: Trends, Causes, and Policy Options.” *The Future of Children: Princeton-Brookings* (2014). Available at: [futureofchildren.org/futureofchildren/publications/docs/ResearchReport-Fall2014.pdf](http://futureofchildren.org/futureofchildren/publications/docs/ResearchReport-Fall2014.pdf)

Gundersen, Craig and James P. Ziliak. “Food Insecurity and Health Outcomes.” *Health Affairs* 34, No. 11 (2015).

Hagstrom, P. A. “The Food Stamp Participation and Labor Supply of Married Couples: An Empirical Analysis of Joint Decisions.” *Journal of Human Resources* 31(1996): 383–403.

Haskins, R., and G. Margolis. “Show Me the Evidence: Obama’s Fight for Rigor and Results in Social Policy.” Washington, D. C: Brookings Institution Press, 2014. Available at: [brookings.edu/events/2014/12/01-show-me-evidence-social-policy](http://brookings.edu/events/2014/12/01-show-me-evidence-social-policy)

“Health and Wellness Partnerships.” Healthy Food Bank Hub. Accessed January 1, 2016. Available at: [healthyfood-bankhub.feedingamerica.org/diabetes-project](http://healthyfood-bankhub.feedingamerica.org/diabetes-project)

Hoynes, H. W., and D. W. Schanzenbach. “Work Incentives and the Food Stamp Program.” *Journal of Public Economics* 96(2012): 151–162.

“Hunger and Obesity: Understanding a Food Insecurity Paradigm.” Institute of Medicine of the National Academies (2011).

“Hunger in America 2014.” Feeding America. Available online: [feedingamerica.org/hunger-in-america](http://feedingamerica.org/hunger-in-america)

Lavallee, Aaron “FACT vs. FICTION: USDA’s Supplemental Nutrition Assistance Program.” USDA, June 2011. Available at: [blogs.usda.gov/2011/06/24/fact-vs-fiction-usda%E2%80%99s-supplemental-nutrition-assistance-program](http://blogs.usda.gov/2011/06/24/fact-vs-fiction-usda%E2%80%99s-supplemental-nutrition-assistance-program)

Mabli et al. *Measuring the Effect of Supplemental Nutrition Assistance Program (SNAP) Participation on Food Security*. Prepared by Mathematica Policy Research for the USDA Food and Nutrition Service, August 2013. Available at: [fns.usda.gov/research-and-analysis](http://fns.usda.gov/research-and-analysis)

Mantovani R, E. Williams, and J. Pflieger. “The Extent of Trafficking in the Supplemental Nutrition Assistance Program: 2009–2011.” Prepared by ICF International for the U.S. Department of Agriculture, Food and Nutrition Service (2013).

“New Report on Migrant and Seasonal Farmworker Food Insecurity.” Association of Farmworker Opportunity Programs, September 2015. Available at: <http://afop.org/2015/09/22/new-report-on-migrant-and-seasonal-farmworker-food-insecurity>

Nord, M., and M. Prell. "Food Security Improved Following the 2009 ARRA Increase in SNAP Benefits." *Economic Research Report ERR-116* (2011).

Nord, M. "Effects of the Decline in the Real Value of SNAP Benefits from 2009 to 2011." *Economic Research Report ERR-151* (2013).

"People, Partnerships and Place: Bridging from Clinic to Community." Kaiser Permanente, October 2015. Available at: [share.kaiserpermanente.org/article/people-partnerships-and-place-bridging-from-clinic-to-the-community](http://share.kaiserpermanente.org/article/people-partnerships-and-place-bridging-from-clinic-to-the-community)

*A Place at the Table*. Documentary Film. Directed by Kristi Jacobson and Lori Silverbush. 2013. New York: Magnolia Pictures. Available at: [magpictures.com/aplaceatthetable](http://magpictures.com/aplaceatthetable)

"A Plan of Action to End Hunger in America." Food Research & Action Center, October 2015. Available at: [frac.org/pdf/plan-to-end-hunger-in-america.pdf](http://frac.org/pdf/plan-to-end-hunger-in-america.pdf)

"Program Puts a Dent in Summer Hunger." American Academy of Pediatrics, April 2015. Available at: [sciencedaily.com/releases/2015/04/150426110501.htm](http://sciencedaily.com/releases/2015/04/150426110501.htm)

"Promoting Food Security for All Children." American Academy of Pediatrics, October 2015. Available at: [pediatrics.aappublications.org/content/early/2015/10/20/peds.2015-3301](http://pediatrics.aappublications.org/content/early/2015/10/20/peds.2015-3301)

"The Root Cause Coalition: Addressing Hunger as a Health Issue and Other Social Determinants." Root Cause Coalition, 2015. Available at: [rootcausecoalition.org](http://rootcausecoalition.org).

Rutten, L.F. et al. "Obesity Prevention and National Food Security: A Food Systems Approach." *ISRN Public Health 2012* (2012).

Seligman et al. "Exhaustion of Food Budgets at Month's End and Hospital Admissions for Hypoglycemia." *Health Affairs* 33(2014): 116–123.

Shepard, Donald S., E. Setren and D. Cooper. "Hunger in America: Suffering We All Pay For." Center for American Progress, 2011. Available at: [americanprogress.org/wp-content/uploads/issues/2011/10/pdf/hunger\\_paper.pdf](http://americanprogress.org/wp-content/uploads/issues/2011/10/pdf/hunger_paper.pdf)

"SNAP Matters: How Food Stamps Affect Health and Well-Being." Edited by Judith Bartfeld, Craig Gundersen, Timothy M. Smeeding, and James P. Ziliak. Palo Alto: Stanford University Press (2015).

"Spotlight on Senior Health: Adverse Health Outcomes of Food Insecure Older Americans." Feeding America, March 2014. Available at: [feedingamerica.org/hunger-in-america/our-research/senior-hunger-research/or-spotlight-on-senior-health-executive-summary.pdf](http://feedingamerica.org/hunger-in-america/our-research/senior-hunger-research/or-spotlight-on-senior-health-executive-summary.pdf)

Stenmark et al. "Linking the Clinical Experience to Community Resources to Address Hunger in Colorado." *Health Affairs Blog* (2015). Available at: [healthaffairs.org/blog/2015/07/13/linking-the-clinical-experience-to-community-resources-to-address-hunger-in-colorado](http://healthaffairs.org/blog/2015/07/13/linking-the-clinical-experience-to-community-resources-to-address-hunger-in-colorado)

Tarasuk et al. "Association between Household Food Insecurity and Annual Health Care Costs." *Canadian Medical Association Journal* (2015). Available at: [ncbi.nlm.nih.gov/pubmed/26261199](http://ncbi.nlm.nih.gov/pubmed/26261199)

"Understanding the Connections: Food Insecurity and Obesity." Food Research & Action Center, October 2015. Available at: [frac.org/pdf/frac\\_brief\\_understanding\\_the\\_connections.pdf](http://frac.org/pdf/frac_brief_understanding_the_connections.pdf)

Widome et al. "Food Insecurity among Veterans of the US Wars in Iraq and Afghanistan." *Public Health Nutrition* 18 (2014): 844–849.



# APPENDIX III: ACRONYMS

CACFP - Child and Adult Care Food Program  
CBO - Congressional Budget Office  
CCHIP - Community Childhood Hunger Identification Project  
CDC – Centers for Disease Control and Prevention  
DHHS - U.S. Department of Health and Human Services  
EPA – Environmental Protection Agencies  
FAO - United Nations Food and Agricultural Organization  
FDPIR – Food Distribution Program on Indian Reservations  
FNS - Food and Nutrition Service (U.S. Department of Agriculture)  
FSP - Food Stamp Program  
FSS - Food Security Supplement  
HFFI - Healthy Food Financing Initiative  
HFSSM - Household Food Security Survey Module  
LSRO - Life Sciences Research Office (Federation of American Societies for Experimental Biology)  
NHANES - National Health and Nutrition Examination Survey  
NNMRRP - National Nutrition Monitoring and Related Research Program  
NSLP - National School Lunch Program  
PHA - Partnership for a Healthier America  
RDA - Recommended Dietary Allowances  
SBP - School Breakfast Program  
SFSP - Summer Food Service Program  
SNAP - Supplemental Nutrition Assistance Program  
USDA - U.S. Department of Agriculture  
WIC - Special Supplemental Nutrition Program for Women, Infants, and Children